

## IN THE CLAIMS

Please amend the claims as indicated below:

### 1 – 2. (CANCELLED)

3. (CURRENTLY AMENDED) A gearbox as in claim 1 wherein comprising:  
a plurality of gears forming gearsets, each gearset including at least one shaft extending from the gearset, wherein the gearsets are sized having ratios varying by degrees of separation of a common ratio in a geometric sequence,

wherein the common ratio for is calculated by dividing a number of gearset combinations of forward speeds in the gearbox by a number of gearsets between two shafts, where the number of gearsets between two shafts is two or more,

and the degrees of separation of the common ratio for gearsets between a next pair of shafts is determined by dividing the common ratio from the prior pair of shafts by a number of gearsets between the next pair of shafts until all shaft pairs are calculated, and

further wherein the degrees of separation of the common ratio of gearsets in a last pair of shafts when calculated may have only 1 gearshaft between them.

### 4 - 21. (CANCELLED)

22. (CURRENTLY AMENDED) A gearbox as in claim 14 wherein comprising:  
a plurality of gears forming gearsets, each gearset including at least one shaft extending from the gearset, wherein the gearsets are sized having ratios varying by degrees of separation of a common ratio in a geometric sequence, wherein

the gearbox includes no more than thirteen gearsets and the gearsets are configured to form the gearbox as comprising 24 forward torques;

R is a common ratio in a geometric sequence, the gearbox further comprising:

a first frame member that includes a first gearset unit having gearsets sized to have a common ratio selected from the group consisting of  $R^{12}$ ,  $1/R^8$  and  $1/R^6$ ;

a second frame member that includes a second gearset unit having gearsets sized to have a common ratio selected from the group consisting of  $1/R^4$ ,  $1/R^2$  and  $1/R^3$ ;

a third frame member that includes a third gearset unit having gearsets sized to have a common ratio of  $1/R$ ; and  
a fourth frame member that includes a reverse pinion idle gear and a reverse gear coupled to a power source producing 24 reverse torques.

23. (CURRENTLY AMENDED) A gearbox ~~as in claim 14 wherein comprising:~~ a plurality of gears forming gearsets, each gearset including at least one shaft extending from the gearset, wherein the gearsets are sized having ratios varying by degrees of separation of a common ratio in a geometric sequence, wherein,

the gearbox includes no more than thirteen gearsets and the gearsets are configured to form the gearbox as comprising 24 forward torques;

wherein  $R$  is a common ratio in a geometric sequence, the gearbox further comprising:

a frame member comprising 3 units of gearsets including:

a first unit having gearsets sized to have a common ratio selected from the group consisting of  $1/R^{12}$  and  $1/R^4$ ;

a second unit having gearsets sized to have a common ratio selected from the group consisting of  $1/R^6$  and  $1/R^2$ , and

a third unit having gearsets sized to have a common ratio of  $1/R$ , and a reverse pinion coupled to a power source to produce 12 reverse torques.

24. (CURRENTLY AMENDED) A gearbox ~~as in claim 14 wherein comprising:~~ a plurality of gears forming gearsets, each gearset including at least one shaft extending from the gearset, wherein the gearsets are sized having ratios varying by degrees of separation of a common ratio in a geometric sequence wherein  $R$  is a common ratio in a geometric sequence, the gearbox further comprising:

a frame that includes 4 units of gearsets forming 5 shafts including:

a first unit having gearsets sized to have a common ratio selected from the group consisting of  $R^0$ ,  $1/R^8$  and  $1/R^3$ ;

a second unit having gearsets sized to have a common ratio selected from the group consisting of  $R^0$ ,  $1/R^8$  and  $1/R^3$ ;

a third unit having gearsets sized to have a common ratio of  $R^8$ ,  $R^0$  and  $1/R$ ; and

a fourth unit having gearsets sized to have a common ratio of  $R^0$  and  $1/R$ , and a reverse pinion coupled to a power source to produce 24 reverse torques.

25. (CANCELLED)

26. (CURRENTLY AMENDED) A gearbox ~~as in claim 14 wherein comprising:~~ a plurality of gears forming gearsets, each gearset including at least one shaft extending from the gearset, wherein the gearsets are sized having ratios varying by degrees of separation of a common ratio in a geometric sequence wherein  $R$  is a common ratio in a geometric sequence, the gearbox further comprising:

a frame member members comprising 4 units of gearsets forming 5 shafts, including a first input shaft and a second split input shaft such that the gearbox produces an additional 12 forward torques; and

a first unit having gearsets sized to have a common ratio of  $R^0$ ;

a second unit having 2 gearsets sized to have a common ratio of  $1/R^{12}$ ;

a third set of gearsets sized to have a common ratio selected from the

group consisting of  $1/R^4$  and  $1/R^3$ ; and

a fourth unit having gearsets sized to have a common ratio of  $1/R$ , and a reverse pinion coupled to a power source to produce 24 reverse speeds.

27. (CURRENTLY AMENDED) A method of gearbox design comprising:

selecting a number of torques for the gearbox;

determining a number of gearset units based upon a multiplier number representative of the number of torques selected;

providing a number of gearsets in each gearset unit based upon the number of torques selected;

determining a number of shafts equal to the number of gearset units plus one;

determining a degree of separation of a common ratio in a geometric sequence for each for each gearset unit by dividing the number of torques selected by the number of gearsets in a first gearset unit, and then dividing a remainder of the degree of separation of the common ratio by the number of gearsets in a second gearset unit; and

repeating a division step for remaining units until the degree of separation of the common ratio equals one.